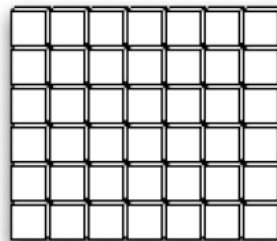


3892 Arnie's Dog Biscuits

Our discerning gourmet puppy Arnie is turning to you for a program to help him split his dog biscuits. Each biscuit is shaped like a rectangle and perforated into equal sized squares.

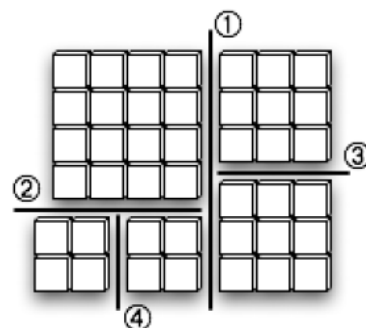
Unfortunately, Arnie will only eat square-shaped biscuits; therefore, he must break the biscuit into squares. Each break, termed a split, is applied to one rectangle, runs along one straight perforated line, and separates the rectangle into two pieces.



Input

The first line of the input contains one positive integer n , the number of biscuits to split. Each of the next n lines contains two positive integers r and c , the number of rows and columns of one biscuit, separated by white space:

This defines two biscuits: the one shown above which requires four splits, and a square biscuit which requires no splits.



Output

The output contains one line for each biscuit specifying the minimal number of splits required to break the biscuit into squares.

Sample Input

```
2
6 7
5 5
```

Sample Output

```
4
0
```